REMARKS

Applicants thank the Examiner for allowing claims 18-28 and 33, and for indicating that claims 2-4, 6, 8, 9, 12-16 and 29-32 would be allowable if they did not depend from a rejected base claim.

Claims 1, 5, 7, 10-11 and 17 remain rejected under 35 U.S.C. 102(b) as anticipated by Suzuki et al (US 6,641,878). The Examiners comments concerning the fact that Suzuki describes a container (actually the usual term for this "container" is "housing" as in optical pickup housing, and this will be used to refer to Suzuki's containers to avoid confusion) that meets the limitations of the presently ovenware are, in part, well taken. However there are significant differences between the housing of Suzuki and the presently claimed ovenware.

In Suzuki the reason for the desired high thermal conductivity not to heat something but to cool something, namely the contents of the housing and the housing itself (see col. 1, lines 58-65, and US6871351 for a more extensive discussion on heat in optical pickups). The housing Suzuki discloses is for holding certain types of electronic devices, especially radiation sources. These devices generate heat internally in the container (see col. lines 58-65). In order to prevent overheating of the devices and housing it is preferable that the housing have a high thermal conductivity so that the heat is dissipated. In contrast the present ovenware are designed to heat their contents by absorbing microwave radiation.

More importantly the housings of Suzuki are not suitable for heating or cooking food because they are too small. As mentioned in the previous response the types of housings mentioned by Suzuki are tiny. In support of this see the following enclosed documents which were downloaded from the internet:

(a) Japan's Near Term Optical Storage Roadmap
(b) Recordable Optical Pickup Head for Blu-ray Disc
(c) "New Products" about PXR-724U
(d) Victor JVC Optima 73
(e) Victor JVC Optima 715
(f) Victor JVC Optima 725

These documents will be referred by the letter designation.

Optical pickups in general are described on p. 5-6 of (a), and this discussion emphasizes the trend towards smaller and smaller assemblies.

The remainder of the documents, (b)-(f) describe various actual optical pickups, and in particular give dimensions of those pickups. The pickups include not only the housing of Suzuki, but also associated wiring, mounting, electrical connectors, etc. This is clearly seen in (b), wherein the black "box" in the lower left hand corner is the housing that concerns Suzuki. From the ruler in the picture, and the overall dimensions we can roughly estimate that this box has dimensions of 30x43x18 mm (exterior dimensions). This means the housing encompasses a volume of about 0.023 Liters (0.8 fl. oz). We can estimate the volume of the JVC housings even more accurately since dimensional drawings are given. For example from the drawing of the Optima 715 it appears the housing outer dimensions are 15x14x8.7 mm. This is a volume of about 0.018 Liters (0.6 fl oz.). The aperture (hole) in this housing for the laser(s) to shine through is 4 mm in diameter. Similar estimates may be made for the other pickups illustrated in these documents.

Ovenware, or any item used for heating or cooking foods, must have several shape and "dimensional" attributes to be useful. The shape must one that can reasonably hold the food and/or drink, and the food or drink must be easily added to and removed from ovenware. In addition the shape must be such that it can be rested in a stable position in which the food and/or drink does not spill during heating. Finally the ovenware must be of a suitable volume. It must have a reasonable minimum working volume so that a "normal" amount of food and/or drink may be heated.

The housings of Suzuki, as illustrated in the above mentioned documents, are so small no reasonable person would use them, or even think of using them, for heating or cooking food. They simply would not hold enough to be useful. In addition, Suzuki doesn't describe the sizes of his containers, so it is reasonable that one skilled in the field of optical pickups would assume that the dimensions of the housings Suzuki describes would of the size shown in the documents.

The housings of Suzuki have some other attributes that render them not useful as cookware. For example they normally have electrical leads through their walls to connect the electronic devices inside the housings to the rest of the optical pickup and the apparatus as a whole. Some of these connections are clearly visible in the

drawings/pictures of documents (b)-(f). In addition as noted above the only aperture in these housings is usually the hole through which a laser or similar device shines and whose reflection is recorded. As noted above this hole is normally very small, in the case of the Optima 715 it is 4 mm in diameter, far too small to be useful in filling or emptying the housing of food or drink.

Thus while the material used in Suzuki's housing may have similar properties to that of the ovenware now being claimed, the housings themselves are NOT suitable to use as ovenware. The Examiner's point about Suzuki's housing (container) being able to perform in a realistic way as ovenware is therefore not correct and Suzuki does not anticipate these claims.

In view of the foregoing, allowance of the above-referenced application is respectfully requested.

Respectfully submitted,

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Dated: 8-15-05

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JAPAN'S NEAR-TERM OPTICAL STORAGE ROADMAP

Beyond the present multimedia application with limited moving images, new optical storage applications are appearing on the horizon, such as full-frame video storage with capabilities for interactive control, image database storage, floppy replacement, and multiplatform computing. In order to address these new applications, the capacity of optical disks must continue to increase over the next five years while the price of the media must continue to drop. Using various new techniques, the Japanese optical storage industry is following a well-planned roadmap to reach these goals.

Japanese industry officials foresee 4 GB capacity per disk as an important threshold that needs to be reached to enable digital video storage: a one-minute video clip using 24-bit color and 640 x 480 pixel frames requires 33 MB of storage capacity using MPEG-2 (the industry standard for video compression) and assuming a compression rate of 30 -- for a two-hour video, this translates to about 4 GB. (Depending on the fidelity of the compression technique used, this number may vary widely.) Japanese projections indicate that the 5.25 in. standard-format read-write-erase disks will reach this critical 4 GB capacity by mid-1997, as Figure 3.8 shows. Toshiba, Matsushita, and Sony are aggressively pursuing CD formats that offer lower-cost solutions at the expense of longer access times.

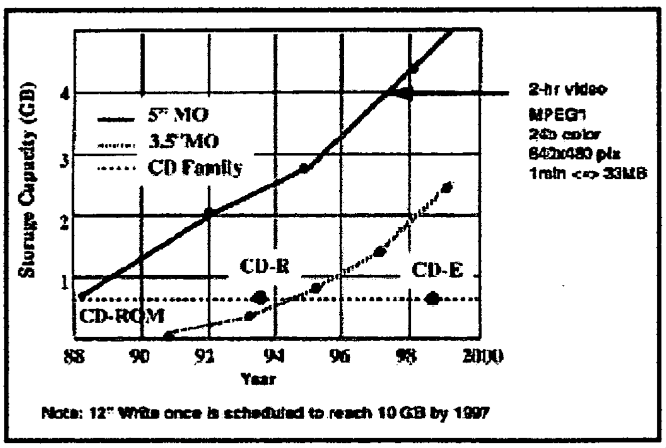


Fig. 3.8. Roadmap for optical storage products at Hitachi-Maxell.

In addition, in order to better address video-on-demand applications, 12 in. WORM products are scheduled to reach 10 GB, and 3.5 in. products are scheduled to reach more than 1 GB capacities by mid-1997. Japanese companies are actively pursuing various techniques to radically enhance the performance of optical disk systems to these levels.

Advances in Optical Storage Media in Japan

Most of the companies the JTEC panel visited in Japan were involved with magneto-optical (MO) media, which is presently the workhorse of the data storage industry. However, they are also actively investigating, at development and production levels, the phase-change media championed by Matsushita. Matsushita offers several product lines that use this technology, and it plans to announce several more. A diversity of opinion exists between companies as to if and when phase-change media will replace magneto-optical media.

Magneto-optical media

Each technology has its strengths and weaknesses. The magneto-optical (MO) approach is based on thermomagnetic domain switching of magneto-optical materials. When in the presence of a magnetic field, a focused laser beam heats a small region in a magneto-optic thin-film material (e.g., TbFeCo), the magnetic domains in the heated area orient themselves with respect to the magnetic field direction and polarity. By keeping the direction of the magnetic field the same but reversing its polarity, the magnetic domains are restricted to remaining in two distinct states (up or down), as described by the arrows in Figure 3.9. Domains in different states exhibit different optical properties, imposing different polarization retardation onto the readout laser beam as a result of the Kerr effect. The resulting optical polarization modulation is, however, very small (less than 1 degree rotation), requiring relatively complex optical head designs and receiver circuits. In addition, a magnet is required during recording, making the setup bulkier and increasing the power requirements.

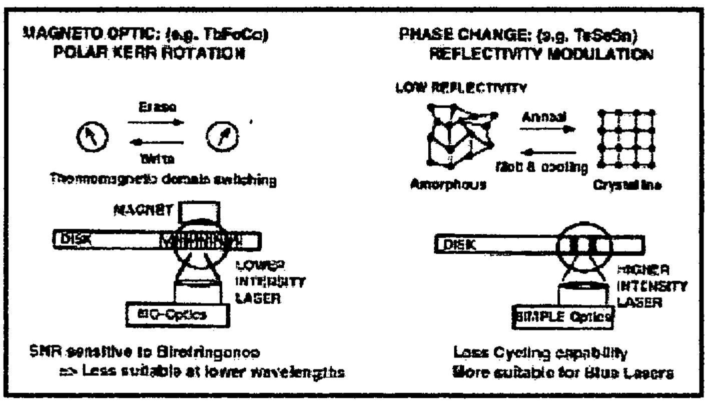


Fig. 3.9. Reversible optical storage media in production.

Other major shortcomings of the MO approach are becoming apparent. As the wavelength of the recording and readout laser is shifted towards the blue for increased storage density, the birefringence exhibited by the plastic materials that protect and support the magneto-optic thin film increases. This parasitic birefringence exhibits itself directly as an increase in background noise, significantly reducing the available signal-to-noise ratio during readout. Thus, an important area of active research on MO media is the search for less birefringent plastic materials that can be used for MO disks with blue lasers.

Researchers at Sony and Hitachi-Maxell are pursuing higher storage densities by investigating the effects of introducing a second active MO material layer into the media system. Each company has discovered a method for increasing capacity using this approach: Sony's magneto-optic superresolution approach and Hitachi-Maxell's multivalued recording approach. The two companies will shortly cross-license their approaches.

Magneto-optic superresolution

Sony's magneto-optic superresolution is achieved by bringing two layers of two different MO materials in close contact with each other. One of the layers behaves as a readout layer and the other as a memory layer. When the readout layer is heated past a certain threshold,

information is copied into it from the memory layer by magnetic exchange coupling. Since the cooler regions of the mark recorded in the memory layer are not allowed to copy into the readout layer, only the peak portion of the laser beam intensity profile affects the readout layer; thus the spot size is effectively reduced.

Multivalued recording

In a similar fashion, Hitachi-Maxell's multivalued recording approach also relies on two layers of magneto-optic films, each having different magnetic properties. However, in this case the two active layers need not to be in close contact. Each active layer has a different recording sensitivity to the recording laser beam intensity, as well as to the strength of the applied magnetic field. By using these properties and modulating the laser beam intensity during recording, researchers at Hitachi-Maxell have demonstrated the feasibility of recording and retrieving four bits of information from the same physical location. This concept has already entered the development and pilot production line phase. (This phase will be lead by the researcher who discovered the original concept.)

Phase-change media

The phase-change approach (Fig 3.9, right column) is inherently simpler than the MO approach (Fig. 3.9, left column). It is based on the cycling of a thin-film material (e.g., TeSeSn) between its amorphous and crystalline states under the influence of a heating laser beam. The material's amorphous state exhibits low reflectivity, while the crystalline state is highly reflective. The optical head design is much simpler than that of the MO approach. Since phase-change media relies not on polarization rotation but on reflection modulation of the readout laser beam, it is not affected by the parasitic birefringence effects; thus, it appears to be better suited for shorter-wavelength recording. The major shortcomings of this technology are its lower cycling capability due to material fatigue (a few hundred thousand write-erase cycles versus more than a million cycles in MO materials) and a possible requirement of higher laser intensity for recording.

It is the panel's belief that the relative success of the magneto-optic and phase-change approaches will be critically dependent on economic rather than performance factors, and the lowest-cost approach will in the end capture the market.

Optical Media Manufacturing and Recording Geometry

An important area of intense study is that of media manufacturing. As described earlier, optical disk surfaces are preformatted in grooves and lands in order to feed back to the servo system the position of the tracks with respect to the optical head. Thus, during the fabrication process these grooves and lands must be transferred to the surface of each disk produced. This is accomplished by generating a master disk on a glass substrate, which is a costly process. The patterns on the master disk are transferred to the surface of each plastic disk produced during an injection molding process. In terms of containing overall costs, it is critical to extend the lifetime of the master disk or to reduce its fabrication cost. In some cases where higher storage density is desired, the substrate of the produced disks can be made out of glass. Japanese glass companies such as NSG are developing various glass substrates and grooving

techniques (e.g., using sol-gel techniques) to lower the cost of glass substrates. Once the disk substrates are preformatted, a series of layers is deposited onto the substrates using thin-film deposition processes in vacuum. Typically, a layer of active magneto-optic thin film is sandwiched between two protective layers, typically AlN, required because of the high chemical reactivity of the active layer materials. A reflective layer is deposited next, and fabrication is finalized by coating the structure with a protective layer. Figure 3.10 shows the final structure.

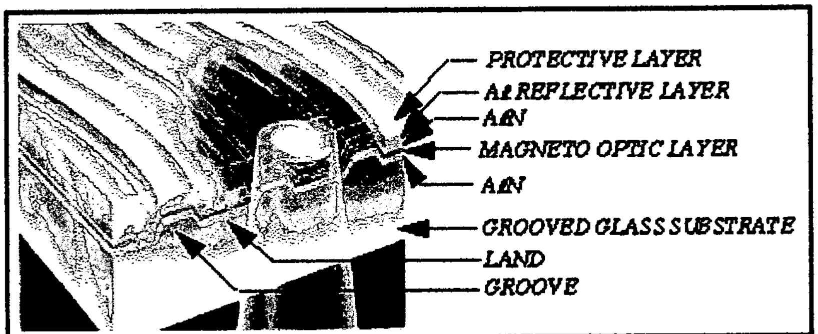


Fig. 3.10. Structure of a magneto-optical disk media (Hitachi-Maxell).

This sequence of processes is critical for achieving defect-free media. Each step is carefully designed, minimizing human involvement, to ensure low-cost, high-quality products. The Japanese have created various media characterization tools and methods to further enhance the reliability of the processes. It was clear in panel discussions with Japanese hosts that they are putting major efforts into media manufacturing; however, the proprietary details of the processes were not discussed.

Another area of progress has been the recording geometry. Traditionally, information has been recorded in the grooves or lands alone. Recently, by using certain noise-cancellation algorithms, Japanese manufacturers have adopted the land and groove recording technique by positioning bits both on lands and in grooves, effectively doubling the track density, as shown in Figure 3.11. For the success of this technique, extensive models have been developed to optimize the depth of the grooves for minimizing crosstalk between data on adjacent lands and grooves and to maximize track pitch for a given wavelength and numerical aperture. Also, some Japanese manufacturers, led by Matsushita, are planning to use *pulse-width modulation* rather than *pulse-position modulation* for their 4X products, to further increase the linear density. In the case of pulse-width modulation, for example, the edges of the mark represent "1," enabling the recording of the sequence "1001" with a single mark. With the present (pulse-position) modulation technique, the same sequence requires four mark spaces. As higher linear bit densities are reached, the inter-symbol interference resulting from the analog nature of the detection channel becomes a limiting factor, effectively smearing the marks. Different digital channels are being investigated, using algorithms to extract the digital information.

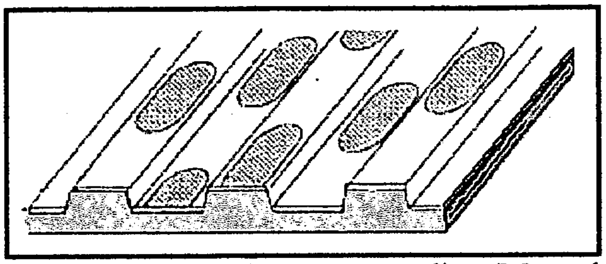


Fig. 3.11. Land and groove recording (Matsushita).

Optical Pickup Heads and Drives

The design and manufacture of the optical pickup head has been a major area of research in Japan, especially in terms of reducing data access time. Designers strive to minimize head mass; manufacturers strive to further reduce manufacturing costs. As described earlier, the main components of the pickup head are the laser, the silicon detectors, the beam-splitters, and the focusing lens. For a competitive head design, the component costs should be minimized while the packaging design should maximize efficient assembly of parts. Japanese manufacturers have so far made significant progress in manufacturing components at very low costs. For example, laser costs have been reduced to $2 per laser, a level that would have been hardly imaginable a decade ago.

Most pickup head R&D efforts are now focused on devising increasingly efficient packaging schemes that employ nontraditional optical components such as holographic beam-splitters in order to reduce the weight of the optical head. The hybrid integration techniques that were developed for combining group III-V compound devices and silicon devices are now being adapted to this end. Figure 3.12 describes an optical head package approach under investigation at Matsushita. First, silicon detectors and possibly their receiver circuits are integrated on a silicon IC using conventional VLSI techniques. An edge-emitting laser is then mounted in a groove etched on the silicon chip, and the laser beam is redirected normally to the surface, using a mirror facet fabricated by anisotropic etching of silicon. A low-mass holographic beam-splitter is used to split the reflected readout beam from the disk surface onto the detectors. It is expected that the package can be produced at lower cost with faster access times.

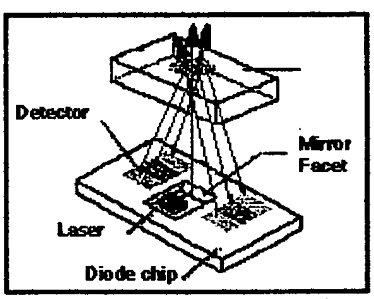


Fig. 3.12. A compact optical pickup head package design (Matsushita).

Major increase in capacity is expected over the next 3 to 5 years using lasers with progressively shorter wavelengths. As mentioned earlier, areal density is governed by spot size, which can be expressed in terms of the wavelength (λ) and the numerical aperture (NA),

of the optical system as

Spot size = 1.18 λ/NA

In order to reduce the spot size, the numerical aperture may be increased, or the wavelength may be reduced. However, since the numerical aperture also affects the depth of focus (depth of focus ~ NA $^{-2}$), increasing the numerical aperture imposes restrictions on the media thickness and the servo controllers. Practically, it is expected that the numerical aperture will be increased only up to 0.62 from its present value of 0.55, allowing an increase in the storage capacity of about 12%.

Japanese researchers indicated to JTEC panelists that they expect laser wavelengths to be gradually decreased over the coming years from the present standard of 780 nm to 430 nm, more than doubling the areal density. Sony is actively pursuing this direction by developing zinc-selenide-based lasers. Sony researchers showed the JTEC panel room-temperature DC operation with a lifetime exceeding one hour. In contrast, researchers at Nichia are actively pursuing GaN-based lasers. Recently they have demonstrated lasing using this material. In view of these recent developments, Japanese companies have apparently reduced their research activities on costly frequency-doubled blue lasers.

Another optical approach to decreasing spot size is the use of optical superresolution. Optical superresolution relies on the diffraction properties of focused beams, in that the spot size of a focused beam can be made smaller if the beam intensity profile incident on the focusing lens is in the shape of a ring. Thus, by blocking the central portion of a collimated beam incident onto a focusing lens, spot size can be reduced at the expense of a significant loss in optical power. Because of the optical power loss, this technique does not seem to generate much enthusiasm in companies the panel visited in Japan.

On the other hand, Japanese companies do seem to be putting a great deal of effort into integrating dual-function optical drives capable of recording and reading both CD-ROM and PCR optical disk families. Indeed, the phase-change disk (PD) optical disk system offered by Matsushita allows both the 4X CD-ROM family of disks and single-sided 650 MB PCR optical disks to be used by the same drive. The hope is that the versatility of this system will convince users to switch their CD-ROM drives to PD drives. The key to this technology is a new micro-optical head design that is compatible with both formats. A new PCR media that provides high reliability and high-volume production of these rewritable disks makes this approach attractive and economical. Furthermore, a new tray mechanism that accepts both cartridges and bare CDs adds to the versatility of the system. Matsushita's PD systems offer 650 MB capacity with 870 kB/s transfer rate, and access time in the order of 45 ms at 2026 rpm.

Trends in Optical Storage

Undoubtedly, over the next five years or so, many of the new approaches described above will find their places in the next generations of optical storage products, alone or in combination. At a 1994 workshop organized by OIDA on optical storage, a group of U.S. experts presented a potential scenario describing the order in which these technologies may be introduced and

how they may affect the capacity, seek time, and data rates of optical storage systems. This information is summarized in Figures 3.13 and 3.14.

Interestingly, most of the new techniques described above are for increasing capacity, and few techniques are being investigated for improving seek times and data rates. This might be an indication of a lack of cost-effective solutions to improving the speed of optical disk systems, but it may also indicate that Japan's optical storage industry is focusing on multimedia and entertainment applications with modest speed requirements, thus leaving the mainstream computing applications to magnetic hard disk drives.

Figure 3.14 also points out that parallel readout of optical storage may be an important research direction to increase data rates for certain high-speed applications. However, the main bottleneck limiting data rates is the processor bus speeds, which may only reach 1 Gbit/s over the next five years. Japanese optical storage makers believe they may be able to provide data rates up to 50 to 100 Mbits/s without resorting to parallelism.

It is also important to note from these figures that Japan's optical storage technology roadmap becomes increasingly fuzzy beyond the turn of the millennium, thus leaving the door open for less conventional optical storage techniques. This may present an opportunity for the U.S. industry. As described below, both Japan and the United States are pursuing some less conventional approaches that have the potential to make a long-term impact on the future of this industry.

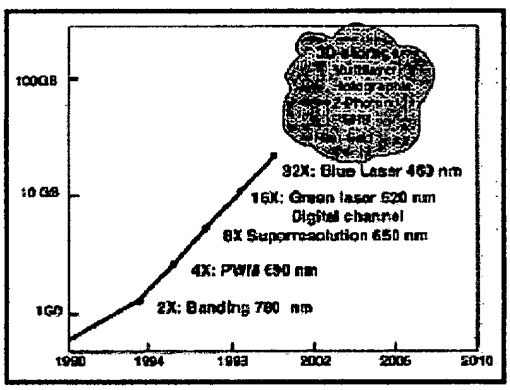


Fig. 3.13. Trends in optical storage: evolution of capacity (OIDA Workshop on Optical Storage 1994).

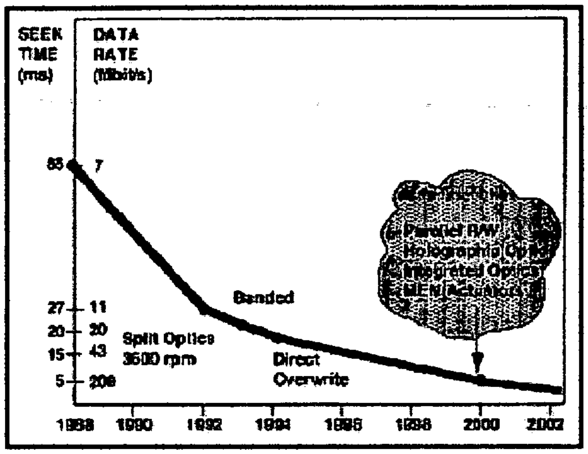


Fig. 3.14. Trends in optical storage: evolution of seek time and data rates (OIDA Workshop on Optical Storage 1994).

Published: February 1996; WTEC Hyper-Librarian

NEW Products Announced December 28, 1998

Thin Design Through Lightweight Design
Optical Pickup for Thin 24-Speed CD-ROM Drives
PXR-724U

□¡ OverView

In addition to the notebook computer market, demands for reduced space requirements are mounting in the desktop computer market as well, and thinner internal CD-ROM drives are sought.
This newly developed optical pickup for use in thin 24-speed drives contributes greatly to a thinner CD-ROM drive form factor.

□¡ Feature

1. Unique damping design for superior tracking characteristics
2. Lightweight actuator with improved vibration damping
3. Tracking error signal detection: Three-beam method
   Focusing error signal detection: Astigmatic method
4. Outstanding lightweight design for high-speed access
5. Excellent cost-performance

□¡ Specifications

Tracking sensitivity:	0.4mm/V
Tracking resonance frequency:	58Hz
Focusing sensitivity:	0.95mm/V
Focusing resonance frequency:	58Hz
RF signal:	0.7Vp-p
Tracking error signal:	100mV
Focusing error signal:	860mV
External dimensions:	29.5 mm (length) x 45 mm (width) x 7.3 mm (height)
Weight:	5g

■光学的仕様：Optical Specifications

項 目 Item	仕 様 Specifications		
対物レンズ Objective Lens	焦点距離 Focal Length	(f)	2.8 mm
	開口数 Numerical Aperture	(N.A.)	0.45
	作動距離 Working Distance	(W.D.)	1.6 mm
半導体レーザー Laser Diode	GaAlAs レーザーダイオード GaAlAs Laser Diode		
	レーザー波長 Laser Wave Length	(λ)	775 nm～800 nm

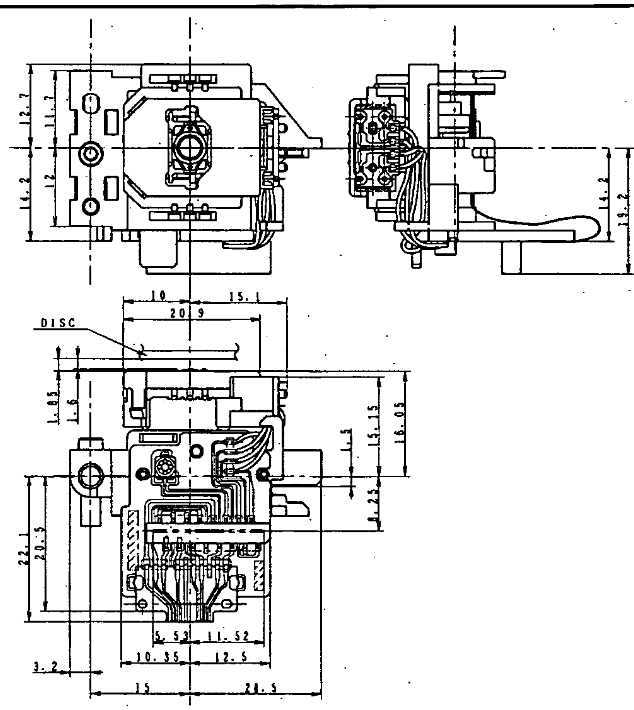
■機械的仕様：Mechanical Specifications

項 目 Item	仕 様 Specifications	
質量 Weight	0.009 kg	
外形寸法 Dimensions	31.9 mm× 38.7 mm× 38.4 mm	
対物レンズ可動範囲 Movable Distance of the Objective Lens	フォーカス方向：動作基準位置より Focus Axis	±0.75 mm以上
	トラッキング方向：中立位置より Tracking Axis	±0.5 mm以上

■電気的仕様：Electrical Specifications

項 目 Item	仕 様 Specifications	
		OPTIMA-73
アクチュエーター部 Actuator	フォーカス感度 (1Hz) Focus Sensitivity	1.0 mm/V
	フォーカス共振周波数 Focus Resonance-freq	29 Hz
	トラッキング感度 (1Hz) Tracking Sensitivity	1.2 mm/V
	トラッキング共振周波数 Tracking Resonance-freq	29 Hz
光学部 Optical/Electrical [当社標準評価回路使用の場合]	RF信号 RF Level	0.87 V(p-p)
	フォーカスエラー信号 Focus Error Signal	3.7 V(p-p)
	トラッキングエラー信号 Tracking Error Signal	1.0 V(p-p)

■外形寸法：Dimensions (mm)



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VICTOR COMPANY OF JAPAN, LIMITED

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CAR CD / AUDIO用 光ピックアップ
Optical Pickups for Car CD / Audio

■光学的仕様：Optical Specifications

項 目 Item	仕 様 Specifications		
対物レンズ Objective Lens	焦点距離 Focal Length	(f)	2.8 mm
	開口数 Numerical Aperture	(N.A.)	0.45
	作動距離 Working Distance	(W.D.)	1.6 mm
半導体レーザー Laser Diode	GaAlAs レーザーダイオード GaAlAs Laser Diode		
	レーザー波長 Laser Wave Length	(λ)	775 nm~815 nm
サーボエラー信号検出方式 Servo Error Detection Method	フォーカスエラー Focus Error		SSD法 Spot Size Detection Method
	トラッキングエラー Tracking Error		3ビーム法 3-Beam Method

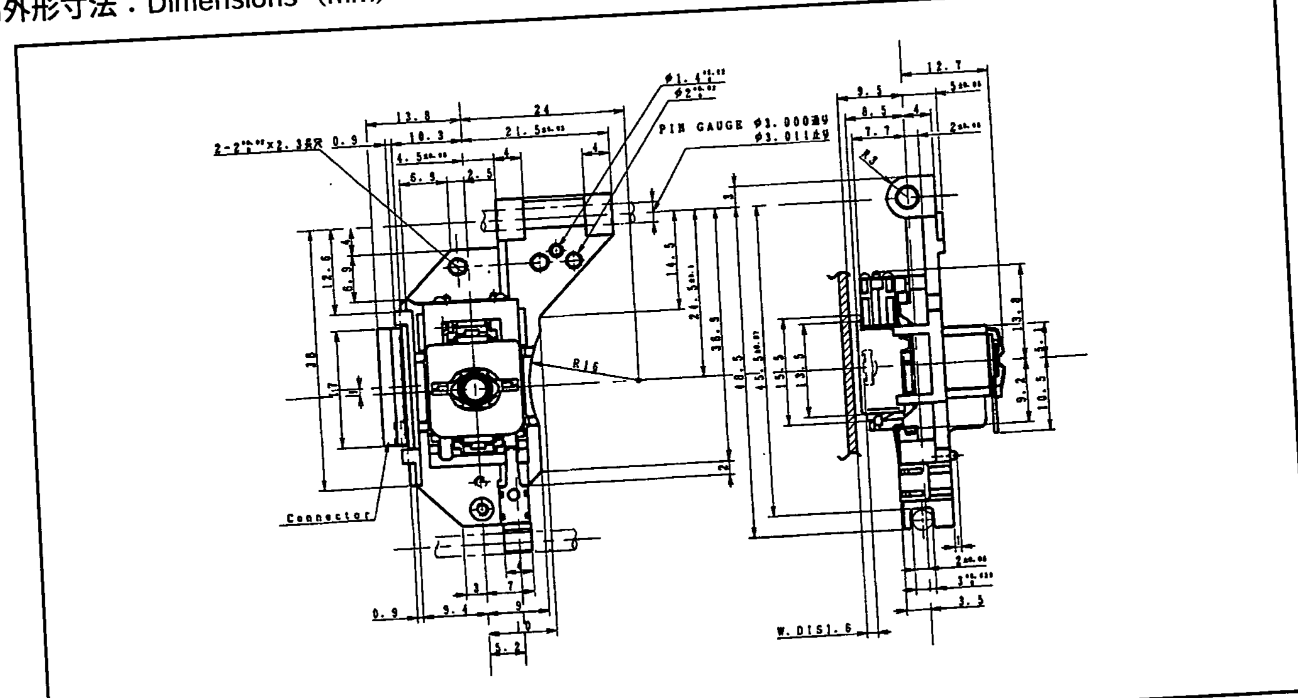
■機械的仕様：Mechanical Specifications

項 目 Item	仕 様 Specifications	
質量 Mass	約0.01 kg	
外形寸法 Dimensions	51.5 mm× 35.3 mm× 21.2 mm	
対物レンズ可動範囲 Movable Distance of the Objective Lens	フォーカス方向：動作基準位置より Focus Axis	±0.75 mm
	トラッキング方向：中立位置より Tracking Axis	±0.5 mm

■電気的仕様：Electrical Specifications

項 目 Item	仕 様 Specifications	
アクチュエーター部 Actuator	フォーカス感度（1Hz） Focus Sensitivity	1.5 mm/V
	トラッキング感度（1Hz） Tracking Sensitivity	1.3 mm/V
光学部 Optical/Electrical [当社標準回路使用の場合]	RF信号 RF Level	1.0 V(p-p)
	フォーカスエラー信号 Focus Error Signal	4.5 V(p-p)
	トラッキングエラー信号 Tracking Error Signal	1.15 V(p-p)

■外形寸法：Dimensions（mm）



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URL: http://www.jvc-victor.co.jp/candd/
E-mail: wfcad@skt.jvc-victor.co.jp

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CAR CD / AUDIO用 光ピックアップ
Optical Pickups for Car CD / Audio

OPTIMA-725

■光学的仕様：Optical Specifications

項目 Item		仕様 Specifications
対物レンズ Objective Lens	焦点距離 Focal Length	(f) 2.8 mm
	開口数 Numerical Aperture	(N.A.) 0.45
	作動距離 Working Distance	(W.D.) 1.6 mm
半導体レーザー Laser Diode	GaAlAs レーザーダイオード GaAlAs Laser Diode	
	レーザー波長 Laser Wave Length	(λ) 775 nm~800 nm
サーボエラー信号検出方式 Servo Error Detection Method	フォーカスエラー Focusing Error	SSD法 Spot Size Detetction Method
	トラッキングエラー Tracking Error	3ビーム法式 3-Beam Method

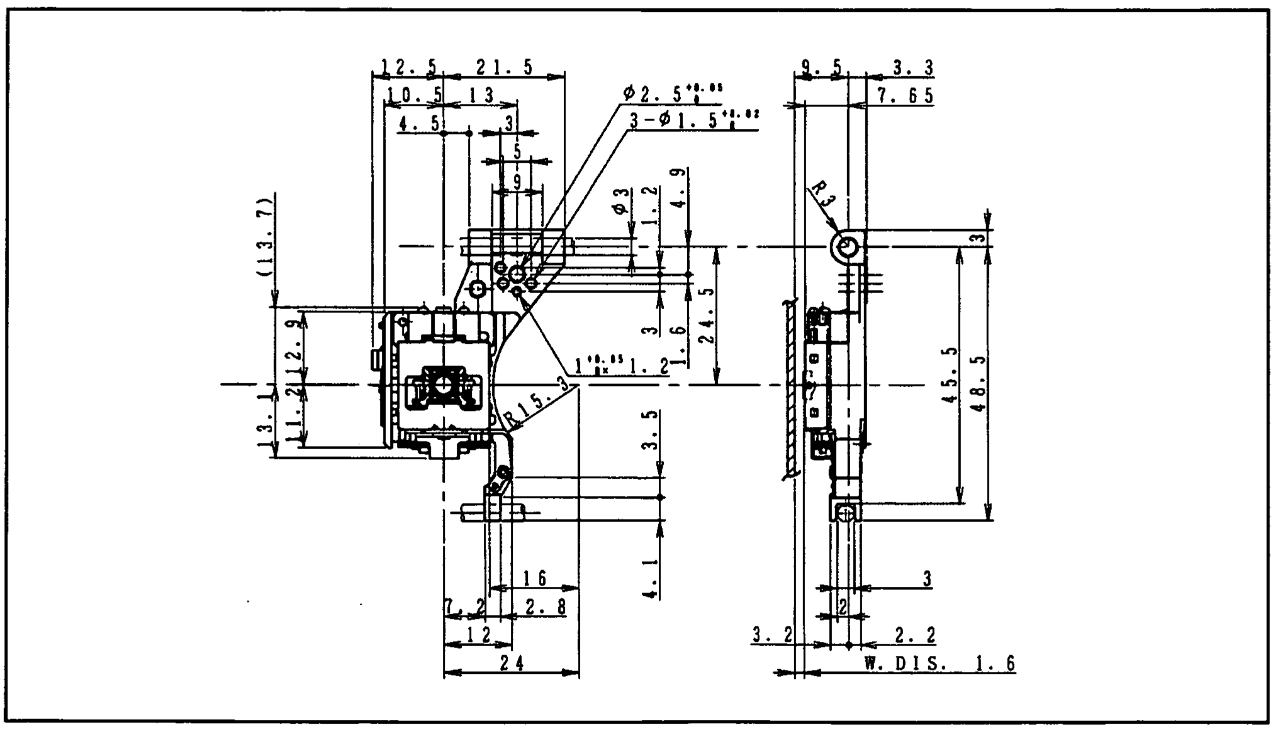
■機械的仕様：Mechanical Specifications

項目 Item	仕様 Specifications	
質量 Mass	約0.017 kg	
外形寸法 Dimensions	51.5 mm× 34 mm× 11mm	
対物レンズ可動範囲 Movable Distance of the Objective Lens	フォーカス方向：動作基準位置より Focus Axis	±0.9 mm
	トラッキング方向：中立位置より Tracking Axis	±0.5 mm

■電気的仕様：Electrical Specifications

項目 Item		仕様 Specifications
アクチュエーター部 Actuator	フォーカス感度 (1Hz) Focus Sensitivity	0.95 mm/V
	トラッキング感度 (1Hz) Tracking Sensitivity	0.9 mm/V
光学部 Optical/Electrical (当社標準回路使用の場合)	RF信号 RF Level	1.0 V(p-p)
	フォーカスエラー信号 Focus Error Signal	4.5 V(p-p)
	トラッキングエラー信号 Tracking Error Signal	1.15 V(p-p)

■外形寸法：Dimensions (mm)



仕様及び外観は、改良のため予告なく変更することがありますので、ご了承ください。
Design and specifications are subject to change without notice.

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